

Before the Federal Communications Commission

Comments in OPPOSITION to RM-10740

By Martin P. Granica WB2RJR

I have been an amateur radio operator since 1963 and presently hold an Advanced Class license. I also have impaired hearing in the low and middle frequency ranges which has over the years has resulted in my confining my amateur radio voice communications almost exclusively to AM. The reason for this is twofold. One is the carrier presence which tends to eliminate background noise and increases the intelligibility of speech for hearing impaired persons, and two, the greater transmitted audio bandwidth results in significantly greater speech intelligibility than SSB.

The petitioners seek to limit the maximum transmitted audio frequencies used in AM operation to 2800 hertz. This would have a significant and deleterious effect on speech intelligibility for the hearing impaired rendering AM voice operations very difficult if not impossible for some. Kalyan S. Kasturi's 2002 M.S.E.E. Thesis at the University of Texas at Dallas investigated speech intelligibility for the situation where 2 bands of 6 bands of frequencies were lost to a listener in the range of 300-5500 hertz. Of note is that the Articulation Index is approximately 90% when frequencies above 3388 hertz are eliminated but falls to the range of 61-72% when another band below this is also eliminated. This illustrates the serious effect caused to speech intelligibility when higher frequencies are cutoff and a person also has a hearing loss in the remaining frequencies. The petitioners seek to limit AM audio to 2800 hertz where the Articulation Index is approximately 82% for people with normal hearing. I could find no studies using a 2800 hertz cutoff coupled with a loss of frequencies below that, but based on the Kasturi Thesis it seems reasonable to suggest that in this case the Articulation Index would fall below the 61-72% noted by Kasturi.

I strongly urge that the Commission DENY Petition RM-10740 because of the discriminatory effect it would have upon the hearing impaired to participate in amateur radio shortwave voice communications.

Respectively submitted July 22, 2003.

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